

WHAT IS CLAIMED IS:

1 1. A PPPoE (Point-to-Point Protocol over Ethernet) network system, comprising:
2 a client connected to a server through an Ethernet line;
3 said client transmitting a PADI (PPPoE Active Discovery Initiation) packet to said server if
4 said client becomes disconnected from said server in a manner other than by transmission of PADT
5 (PPPoE Active Discovery Terminate) packets between said client and said server;
6 said client checking a packet received from said server, following the transmission of said
7 PADI (PPPoE Active Discovery Initiation) packet, to determine whether the packet received from
8 said server was a PADO (PPPoE Active Discovery Offer) packet;
9 said client extracting a session-ID from said packet received from said server when it is
10 determined that the packet received from said server is not the PADO (PPPoE Active Discovery
11 Offer) packet;
12 said client loading said session-ID into a Session-ID field of a PADT (PPPoE Active
13 Discovery Terminate) packet and transmitting the PADT (PPPoE Active Discovery Terminate)
14 packet to said server and checking for a server transmitted PADT (PPPoE Active Discovery
15 Terminate) packet in response thereto; and
16 said client transmitting a new PADI (PPPoE Active Discovery Initiation) packet to said
17 server to reconnect said server and said client, when said client receives the server transmitted PADT
18 (PPPoE Active Discovery Terminate) packet.

2. The system as set forth in claim 1, wherein said client checks a value of a Code field in said packet received from said server, when checking whether the packet received from said server is the PADO (PPPoE Active Discovery Offer) packet.

3. The system as set forth in claim 1, further comprising:
said client transmitting a PADR (PPPoE Active Discovery Request) packet to said server when the client determines that the packet received from said server is the PADO (PPPoE Active Discovery Offer) packet and checking for a server transmitted PADS (PPPoE Active Discovery Session-confirmation) packet in response thereto; and
said client and said server beginning a PPP (Point-to-Point Protocol) session stage when the client receives the server transmitted PADS (PPPoE Active Discovery Session-confirmation) packet.

4. The system as set forth in claim 3, wherein said client checks a value of a Code field in said packet received from said server, when checking whether the packet received from said server is the PADO (PPPoE Active Discovery Offer) packet.

5. The system as set forth in claim 1, further comprising:
said client also extracting a client MAC (Media Access Control) address from said packet received from said server when it is determined that the packet received from said server is not the PADO (PPPoE Active Discovery Offer) packet and storing the client MAC (Media Access Control) address and session-ID in memory; and

6 said client loading said client MAC (Media Access Control) address as well as said session-
7 ID into the Session-ID field of the PADT (PPPoE Active Discovery Terminate) packet being
8 transmitted to said server.

1 6. A method of establishing reconnection between a client and a server in PPPoE
2 (Point-to-Point Protocol over Ethernet) network system, said method comprising steps of:

3 transmitting a PADI (PPPoE Active Discovery Initiation) packet from said client to said
4 server if said client becomes disconnected from said server in a manner other than by transmission
5 of PADT (PPPoE Active Discovery Terminate) packets between said client and said server;

6 checking a next packet received from said server, following the transmission of said PADI
7 (PPPoE Active Discovery Initiation) packet, to determine whether the next packet received from said
8 server is a PADO (PPPoE Active Discovery Offer) packet;

9 extracting a session-ID from said packet received from said server when it is determined that
10 the packet received from said server is not the PADO (PPPoE Active Discovery Offer) packet;

11 loading said session-ID into a Session-ID field of a PADT (PPPoE Active Discovery
12 Terminate) packet and transmitting the PADT (PPPoE Active Discovery Terminate) packet to said
13 server;

14 checking for reception of a server transmitted PADT (PPPoE Active Discovery Terminate)
15 packet; and

16 transmitting a new PADI (PPPoE Active Discovery Initiation) packet to said server to
17 reconnect said server and said client, when said client receives the server transmitted PADT (PPPoE

18 Active Discovery Terminate) packet.

1 7. The method as set forth in claim 6, further comprising steps of:
2 transmitting a PADR (PPPoE Active Discovery Request) packet to said server, when it is
3 determined that the next packet received from said server after transmitting the PADI (PPPoE Active
4 Discovery Initiation) packet to said server, is the PADO (PPPoE Active Discovery Offer) packet
5 checking for reception of a server transmitted PADS (PPPoE Active Discovery Session-
6 confirmation) packet in response to the PADR (PPPoE Active Discovery Request) packet; and
7 when the client receives the server transmitted PADS (PPPoE Active Discovery Session-
8 confirmation) packet, beginning a PPP (Point-to-Point Protocol) session stage between said client
9 and said server.

1 8. The method as set forth in claim 6, said step of checking a next packet received from
2 said server to determine whether the next packet received from said server is a PADO (PPPoE
3 Active Discovery Offer) packet comprises checking a Code field of the next packet received from
4 said server for a predetermined code.

1 9. The method as set forth in claim 7, said step of checking a next packet received from
2 said server to determine whether the next packet received from said server is a PADO (PPPoE
3 Active Discovery Offer) packet comprises checking a Code field of the next packet received from
4 said server for a predetermined code.

1 10. The method as set forth in claim 6, further comprising:

2 extracting a client MAC (Media Access Control) address from said packet received from said
3 server when it is determined that the packet received from said server is not the PADO (PPPoE
4 Active Discovery Offer) packet and storing the client MAC (Media Access Control) address and
5 session-ID in memory; and

6 loading said client MAC (Media Access Control) address as well as said session-ID into the
7 Session-ID field of the PADT (PPPoE Active Discovery Terminate) packet being transmitted to said
8 server.

1 11. A method of establishing reconnection between a client and a server in PPPoE
2 (Point-to-Point Protocol over Ethernet) network system, said method comprising steps of:

3 transmitting a discovery stage initiation packet from said client to said server if said client
4 becomes disconnected from said server in an abnormal manner during a session stage of operation
5 between said client and said server;

6 checking a Code field of a next packet received from said server to determine whether the
7 received packet is a discovery stage offer packet;

8 transmitting a discovery stage request packet to said server, when it is determined that the
9 next packet received from said server was the discovery stage offer packet

10 checking for reception of a server transmitted discovery stage confirmation packet in
11 response to the discovery stage request packet; and

12 upon reception of the server transmitted discovery stage confirmation packet, beginning a
13 new session stage between said client and said server.

1 12. The method as set forth in claim 11, further comprising steps of:
2 extracting a session-ID from said received packet, when it is determined that the packet
3 received from said server is not the discovery stage offer packet;
4 loading said session-ID into a Session-ID field of a discovery stage terminate packet and
5 transmitting the discovery stage terminate packet to said server;
6 checking for reception of a server transmitted discovery stage terminate packet; and
7 transmitting a new discovery stage initiation packet to said server to reconnect said server
8 and said client, when said client receives the server transmitted discovery stage terminate packet.

1 13. The method as set forth in claim 11, said step of checking the Code field checks for
2 a predetermined value of 0x07 in said Code field.

1 14. The method as set forth in claim 12, said step of checking the Code field checks for
2 a predetermined value of 0x07 in said Code field.

1 15. The method as set forth in claim 12, further comprising:
2 extracting a client MAC (Media Access Control) address from said packet received from said
3 server when it is determined that the received packet is not the discovery stage offer packet and

4 storing the client MAC (Media Access Control) address and session-ID in memory; and
5 loading said client MAC (Media Access Control) address as well as said session-ID into the
6 Session-ID field of the discovery stage terminate packet being transmitted to said server.

1 16. The method as set forth in claim 11, wherein said abnormal manner is any manner
2 other than by transmission of respective discovery stage terminate packets between said client and
3 said server.